REMARKS

Claims 1, 30 and 34 are pending in the application. In the Office Action dated December 23, 2008, claims 1, 30 and 34 are rejected. In the instant Amendment, claims 1, 30 and 34 have been amended.

Claim 1 has been amended to recite that the production simulator means is configured in a Petri net model or a graph model. Support for this amendment is found throughout the application as filed, for example, at p. 24, third paragraph, and p. 47, first full paragraph.

Claim 1 has also been amended to recite that the mathematical expression model is output by the production simulator means, and that the mathematical expression model is configured to correspond to the production simulator means and is created by the production simulator means in each case that an event requiring a production instruction occurs using elements relating to creation of a production schedule. Support for this amendment is found in the application as filed, for example, at p. 24, last two paragraphs.

Claim 1 has also been amended to recite that the optimization calculation means performs optimization calculation processing by using the mathematical expression model and a predetermined evaluation function. Support for this amendment is found in the application as filed, for example, at p. 26, first paragraph.

Claim 1 has also been amended to recite that the simulation result is output as a production schedule. Support for this amendment is found in the application as filed, for example, at p. 26, last sentence of the second to last paragraph.

Claim 1 has further been amended to recite that whenever a new event requiring a production instruction occurs, the production simulator means and the optimization calculation means are linked to each other so that creating the mathematical expression model by the production simulator means and outputting an instruction to the optimization calculation means to perform optimization calculation from the production simulator means is repeated. Support for this amendment is found in the application as filed, for example, at p. 26, firs and second paragraphs.

Claims 30 and 34 have been amended similarly.

Claims 1, 30 and 34 have also been amended to make the language clearer.

No new matter has been added by these amendments. Entry of the foregoing amendments and consideration of the following remarks are respectfully requested.

New Matter

In the Office Action, the Examiner stated that Figs. 1A and B submitted in the last response are additions to the disclosure, and therefore constitute new matter. Applicants respectfully submit that the Figures are not additions to the disclosure. Instead, they are attachments to the response for illustration purposes. Specifically, the figures show a comparison between a flow chart illustrating the process of the present invention (Fig. 1A) and a flow chart (Fig. 1B) illustrating the process of the cited reference Dietrich. They are therefore not drawings of the application. Applicants respectfully request that the objection be withdrawn.

Drawings

As discussed above, Figs. 1A and 1B are not drawings of the application. Applicants respectfully request that the objection be withdrawn.

Rejections under 35 U.S.C. § 112

Claims 1, 30 and 34 are rejected under 35 U.S.C. § 112, ¶1, for failing to comply with the enablement requirement. The Examiner stated that a person skilled in the art would not define a mathematical expression model by virtue of its acquiring inputs, nor would he/she know how a mathematical expression model would acquire inputs. Applicants have amended the claims to recite that the mathematical expression model is output by the production simulator, and that the mathematical expression model is configured to correspond to the production simulator and is created by the production simulator in each case that an event requiring a production instruction occurs using elements relating to creation of a production schedule from all or only part of the production state and the production constraint of the production process. The specification also provides a detailed description of exemplary steps for creating the mathematical model from the production simulator, *see, e.g.,* p. 29, second and third paragraphs. Therefore, this rejection of claims 1, 30 and 34 under 35 U.S.C. § 112, ¶1, is obviated and should be withdrawn.

Claims 1, 30 and 34 are rejected under 35 U.S.C. § 112, ¶1, for failing to comply with the enablement requirement. The Examiner stated that the claims recite the limitation of an

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instruction to create a mathematical expression model by acquiring all or only part of said production state and production constraint, but the specification is silent in teaching an instruction to create a mathematical expression model by acquiring production state and production constraint. Applicants have amended the claims such that the recitation is no longer present in the claims. Therefore, this rejection of claims 1, 30 and 34 under 35 U.S.C. § 112, ¶1, is obviated and should be withdrawn.

Claims 1, 30 and 34 are rejected under 35 U.S.C. § 112, ¶2, as being indefinite for failing to particularly point out and distinctly claimed the subject matter for which the applicant regards as the invention. The Examiner stated that the recitation of "the production instruction obtained" on line 16 of claim 1 lacks antecedent basis. Applicants respectfully point out that claim 1 recites "calculating a production instruction for said production simulator means" in the lines immediately precede line 16. Therefore, the recitation has proper antecedent basis.

The Examiner also pointed out that the following as being unclear: defining the mathematical expression model by what it acquires on lines 8-9, and recitations of "expressing" on lines 11 and 19-20, respectively. Applicants have amended the claims such that these recitations are no longer present in the claims.

Therefore, the rejection of claims 1, 30 and 34 under 35 U.S.C. § 112, ¶2, is obviated, and should be withdrawn.

Rejections under 35 U.S.C. § 102

Claim 1, 30 and 34 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,216,593 to Dietrich et al. ("Dietrich") or U.S. Patent No. 5,315,521 to Hanson et al. ("Hanson").

Dietrich fails to disclose "a production simulator means for simulating a production process expressing a production state and a production constraint of the production process, being configured in Petri net model or a graph model as a discrete system that moves a thing at each event" as recited in the present claims. In addition, as discussed in the Response filed on November 24, 2008, Dietrich merely discloses solving a simplified problem statically and conducting user assessment. In contrast, in the presently claimed invention, whenever a new event occurs, the production simulator means and the optimization calculation means are

linked to each other so that processing for executing simulation, creating the mathematical expression model, and performing optimization calculation are repeated to solve a problem dynamically.

Hanson also fails to teach "a production simulator means for simulating a production process expressing a production state and a production constraint of the production process, being configured in Petri net model or a graph model as a discrete system that moves a thing at each event" as recited in the present claims. Hanson merely discloses generally a process model 72 (see, Hanson, Fig. 2), but fails to teach any structure corresponding to the simulator for simulating a production state. In fact, Hanson teaches that its process model may take on any forms (see, Hanson, at col. 7, ll. 41-60). In addition, Hanson performs only optimization calculation within a fixed time horizon (or solves a problem statically). The term of "production schedule" used in Hanson indicates the total of calculation results in plural fixed time horizons. Hanson merely repeats the following: inputting fixed time horizon and production levels; computing; selecting operating points; inputting (changing) fixed time horizon and production levels; computing; selecting operating points. In contrast, in the presently claimed invention, whenever a new event occurs, the production simulator means and the optimization calculation means are linked to each other so that processing of executing simulation, creating the mathematical expression model, and performing optimization calculation are repeated to solve a problem dynamically.

Therefore, neither Dietrich nor Hanson teaches the presently claimed invention. The rejection of claim 1, 30 and 34 under 35 U.S.C. §102(b) as been anticipated by Dietrich or Hanson should be withdrawn.

It is submitted that in view of the present amendment and foregoing remarks, the application is now in condition for allowance. It is therefore respectfully requested that the application, as amended, be allowed and passed for issue.

Respectfully submitted,

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